

CLAIMS

What is claimed is:

1. An apparatus for forming a Wireless Personal Area Network (WPAN) from a plurality of Personal Area Network (PAN) devices, comprising:
  - a location determinator configured to determine a location for each of said plurality of PAN devices;
  - a comparator coupled to the determinator and configured to compare said location for each of said plurality of PAN devices with a WPAN association criteria in order to determine an identification of each of said plurality of PAN devices that at least partially satisfy said WPAN criteria; and
  - a communication link coupled to the comparator configured to transmit said identification of each of said plurality of PAN devices that at least partially satisfy said WPAN criteria to such devices.
2. The apparatus of claim 1 wherein the determinator determines the location of each of said plurality of PAN device as a function of time and the comparator selects those of said plurality of PAN devices that move substantially together and the communication link transmits the identification of the selected devices.
3. The apparatus of claim 1 wherein the communication link comprises a main hub transceiver coupled to the determinator and a remote relay transceiver coupled to said plurality of PAN devices.
4. The system of claim 3 wherein the plurality of PAN devices intercommunicate using a first combination of data rate and signal power and the main hub and remote relay communicate using a second combination of data rate and signal power, different than the first combination.

5. The system of claim 4 wherein the first combination, relative to the second combination uses shorter range lower power signals, and the second combination, relative to the first combination, uses longer range higher power signals.
6. The system of claim 1 wherein the communication link comprises a wireline link to a remote relay and a wireless link from the remote relay to the plurality of PAN devices.
7. A Wireless Personal Area Network (WPAN), comprising:
  - a plurality of electronic devices each having a Radio Frequency IDentification (RFID) tag function;
  - a remote communication node wirelessly coupled to at least two of said plurality of electronic devices; and
  - a base station coupled to said remote communication node and said RFID tag function of said plurality of electronic devices, wherein said base station is configured to:
    - determine a location for each of said plurality of electronic devices with at least partial utilization of said RFID tag function;
    - compare said location for each of said plurality of electronic devices with a WPAN association criteria in order to determine an identification of each of said plurality of electronic devices that at least partially satisfies said WPAN association criteria; and
    - transmit said identification of each of said plurality of electronic devices that at least partially satisfy said WPAN association criteria to said remote communication node for distribution to at least two of said plurality of electronic devices.

8. The network of claim 7 wherein the base station comprises at least one transceiver and at least three receivers for determining the location of said plurality of electronic devices.
9. The network of claim 7 wherein the WPAN association criteria employed by the base station include identifying a subset of the plurality of electronic devices that move as a group.
10. The network of claim 7 wherein the plurality of electronic devices intercommunicate using a Bluetooth or Zigbee compliant communicator function.
11. The network of claim 7 wherein the base station and the remote communication node intercommunicate using an 802.11 or Bluetooth or wireline communication arrangement.
12. A method for forming a Wireless Personal Area Network (WPAN) with a plurality of Personal Area Network (PAN) devices, comprising the steps of:
  - determining a location for each of said plurality of PAN devices;
  - comparing said location for each of said plurality of PAN devices with a WPAN association criteria;
  - determining an identification of a subset of said plurality of PAN devices based at least in part upon said comparing step; and
  - transmitting said identification of said subset of said plurality of PAN devices that at least partially satisfy said WPAN criteria to at least said subset of PAN devices.

13. The method of claim 12 prior to the transmitting step, forming an ad-hoc network of said plurality of PAN devices, intercommunicating with each other and with the base station.

14. The method of claim 13, wherein the forming step employs the Bluetooth or Zigbee standard.

15. The method of claim 12 wherein the determining step comprises broadcasting a signal from a base station and detecting return signals from an RFID tag function associated with each of the plurality of PAN devices.

16. The method of claim 15 wherein the determining step comprises detecting the return signals using multiple receivers.

17. A method for forming a Wireless Personal Area Network (WPAN) from a plurality of Personal Area Network (PAN) devices, comprising:

determining a location for each of the plurality of PAN devices;

comparing the location determined for each of the PAN devices with WPAN association criteria;

choosing a subset of the PAN devices whose locations at least partially satisfy the WPAN criteria; and

transmitting identification of the devices in the subset to at least the subset of PAN devices.

18. The method of claim 17 wherein the choosing step comprises choosing those PAN devices that are within a predetermined distance of each other.

19. The method of claim 17 wherein the choosing step comprises choosing those PAN devices that move substantially as a group.
20. The method of claim 17 wherein the choosing step comprises choosing those PAN devices that are within a predetermined distance of each other and move substantially as a group.
21. The method of claim 17 wherein the transmitting step comprises first transmitting to a remote relay and second transmitting from the remote relay to the subset of PAN devices.
22. The method of claim 21 wherein the first transmitting step comprises transmitting over a wireline link to the remote relay.
23. The method of claim 22 wherein the second transmitting step comprises transmitting over a wireless link.